

# TIME-VARYING MEASURES IN FINANCIAL REGULATION

DANIEL K. TARULLO\*

## I

### INTRODUCTION

One important lesson of the 2008 financial crisis was the inadequacy of a prudential regulatory system oriented dominantly toward the solvency of individual banking institutions. The contagion spread rapidly through channels such as liquidity squeezes and fire sales of assets. This provided dramatic support to those who had previously argued for a regulatory approach that would account for procyclical behavior, correlated asset holdings, and the substantial interconnections of large financial institutions. This “macroprudential” regulation would focus on the financial system as a whole, in contrast to the traditional “microprudential” focus on individual institutions. A macroprudential approach would additionally address financial cycles and vulnerabilities, rather than business cycles and macroeconomic vulnerabilities. Still, this approach is motivated by macroeconomic concerns—most clearly the damage to the real economy caused by financial crises, but also the potential amplification through financial channels of any recession, no matter what its origins.

To a considerable extent, macroprudential regulation builds on microprudential regulation by taking account of a firm’s vulnerabilities associated with the interaction of financial market actors. Fire sales of assets by weak firms in need of liquidity are the classic example, insofar as all holders of those assets bear costs—whether in the form of lower prices available to other firms in need of liquidity or in the effect of mark-to-market reductions on the balance sheets of firms that did not initially face a liquidity shortfall. At times, though, there can be tension between macroprudential and microprudential aims. A bank’s maintenance of high capital and liquidity levels during a recession may, at least initially, keep the bank’s balance sheet strong. But that balance sheet strength may come at the cost of withholding needed lending from creditworthy firms and households. When many banks adopt, or are forced by

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\* Nomura Professor of International Financial Regulatory Practice, Harvard Law School. From January 2009 to April 2017, the author was a Member of the Board of Governors of the Federal Reserve and the oversight Governor for supervision and regulation. Thanks for comments offered by Don Kohn, Enrica Detragiache, and the participants in the Law and Macroeconomics Conference at Georgetown Law on September 27–28, 2019.

regulators to maintain, that same strategy, the result may be credit and liquidity squeezes across the economy.

The post-crisis commitment to macroprudential regulation was both quick and widespread.<sup>1</sup> A decade later there have been notable additions of macroprudential elements to financial regulation, especially through the enhancement of institution-specific regulation that takes account of systemic considerations.<sup>2</sup> Both mature and emerging market economies have tried a number of other macroprudential policies. Still, the development of macroprudential regulation has been less extensive than might have been expected, especially in the United States. Of course, the officials appointed by President Trump to head the financial regulatory agencies have been pursuing a deregulatory agenda, so recent experience may not tell us much about the underlying challenges of macroprudential policy. But experience prior to the changes in agency leadership suggest that analytic, institutional, and legal problems have also slowed the attainment of a robust macroprudential regulatory system. The obstacles seem especially significant with respect to time-varying macroprudential measures—that is, measures that vary depending on conditions within the financial system.

Examination of these obstacles points us toward that hardy perennial of both economic and legal scholarship—the rule vs. discretion problem. My aim in this short Article is to identify briefly, in Part II, the problems encountered and then to illustrate them with reference to specific examples in Part III. My discussion will center on two post-crisis regulatory innovations with time-varying characteristics: the Countercyclical Capital Buffer (CCyB) and the Liquidity Coverage Ratio (LCR). In Part IV, I offer some tentative suggestions on how to begin navigating the rule vs. discretion problem as it manifests itself in this area. To be clear from the outset, though, the suggestions offered toward the end of the Article are no more than that—a navigational aid, rather than a clear route into port. The analytic and governance issues associated with macroprudential policy, especially of the time-varying form, remain formidable.

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1. In early 2009 the G-20 identified inclusion of a macroprudential perspective as one of the goals for financial regulatory reform. See Press Release, Group of 20, London Summit – Leaders’ Statement ¶ 15 (Apr. 2, 2009), <http://www.g20.utoronto.ca/2009/2009communique0402.pdf> [<https://perma.cc/LGE9-SFGL>] (stating that goals of reform included “reshap[ing] our regulatory systems so that our authorities are able to identify and take account of macro-prudential risks”). On the same day the Financial Stability Forum, predecessor to the Financial Stability Board, issued a report on steps to be taken. FINANCIAL STABILITY FORUM, REPORT OF THE FINANCIAL STABILITY FORUM ON ADDRESSING PROCYCLICALITY IN THE FINANCIAL SYSTEM (Apr. 2, 2009), [https://www.fsb.org/wp-content/uploads/r\\_0904a.pdf](https://www.fsb.org/wp-content/uploads/r_0904a.pdf) [<https://perma.cc/7JPD-QDN3>]. As early as the preceding August, even before the most acute phase of the crisis, Chair Bernanke had used part of his speech at the annual Jackson Hole meeting of central bankers to lay out the case for macroprudential regulation. Ben S. Bernanke, Chairman, Fed. Reserve, Reducing Systemic Risk: Remarks at the Federal Reserve Bank of Kansas City’s Annual Economic Symposium, Jackson Hole, Wyoming (Aug. 22, 2008), <https://www.federalreserve.gov/newsevents/speech/bernanke20080822a.htm> [<https://perma.cc/4Y3E-GJXE>].

2. Perhaps the most important is the capital surcharge for banks of global systemic importance, which was developed to reduce the chances that the failure of such an institution would produce systemic problems.

## II

## THE CHALLENGES OF MACROPRUDENTIAL POLICY

The entire premise of macroprudential policy is systemic. The “macro” perspective does not simply make a policy more effective or efficient. It is compelled by observation of financial system dynamics during crises and recessionary periods. To the degree one follows Minsky in believing that financial stress and crises are largely endogenous to finance itself, the imperative of macroprudential policy is even clearer.<sup>3</sup>

Most policymakers and commentators describe systemic risk as having two dimensions: the *structural* dimension and the *time* dimension. The former refers to interconnectedness and other financial patterns that determine risk at any given point in time. The latter refers to the increase and diminution in risk over time. Macroprudential policies can address both kinds of risk through policies aimed at building the *resiliency* of key financial actors to economic and financial downturns and through policies that *lean against the wind* by trying to prevent the build-up of risk in the first place. Specific policies may focus mostly on one of these aims or may pursue both to some degree. Policies also vary based on whether they are predominantly *through-the-cycle* (or *time invariant*) regulations or whether they are *time-varying*. Thus a resiliency-oriented policy that requires high capital levels at systemically important banks could be either time invariant (a high, fixed capital requirement), or time-varying (a capital requirement that is raised during periods when risk is increasing and lowered when risk is diminishing), or a combination of the two.<sup>4</sup>

The challenges in developing macroprudential regulation are several. First, of course, is the difficulty of tracing patterns of financial activity and regulatory response through the entire financial system. While much progress has been made in developing metrics for measuring systemic risk in the financial system, they remain essentially untested and thus unverified as predictors. The differing etiologies and characteristics of the limited number of relevant real-world observations make it tricky to fix on specific indicators with a high degree of confidence. Just as it is harder to do a general equilibrium analysis than a partial equilibrium analysis, it is harder to take account of *everything*—or even

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3. See Hyman P. Minsky, *The Financial Instability Hypothesis* (Levy Econ. Inst., Working Paper No. 74, 1992), <http://www.levyinstitute.org/pubs/wp74.pdf> [<https://perma.cc/2YW3-K2VW>] (explaining that the financial instability hypothesis “does not rely upon exogenous shocks to generate business cycles of varying severity,” but rather “that business cycles of history are compounded out of . . . the internal dynamics of capitalist economies”).

4. Among accessible overviews of macroprudential policy are Robert C. Hockett, *The Macroprudential Turn: From Institutional ‘Safety and Soundness’ to Systematic ‘Financial Stability’ in Financial Supervision*, 9 VA. L. & BUS. REV. 201 (2015); Turalay Keng, *Macroprudential Regulation: History, Theory and Policy* (Bank for Int’l Settlements, Working Paper No. 86, 2016), <https://www.bis.org/publ/bppdf/bispap86c.pdf> [<https://perma.cc/DMN5-SCCT>]. For a book-length overview, see XAVIER FREIXAS, LUC LAEVEN & JOSÉ-LUIS PEYDRÓ, *SYSTEMIC RISK, CRISES, AND MACROPRUDENTIAL REGULATION* (2015).

everything of arguable importance going on in the financial system—than to focus on a single firm or financial product.

Second is the lack of feedback for macroprudential policymakers.<sup>5</sup> Monetary policy—the exemplary case of a macro policy—provides feedback to central bankers in the form of changes in inflation, unemployment, growth, consumption, investment, and a host of other indicators. The first two of these indicators are the stated goals of monetary policy; the others are reflections of economic activity that will affect the aggregated indicators, albeit in varying and sometimes unpredictable ways. While the impact of monetary policy on the economy is lagged, the interval is measured in quarters, not years. Inflation rates usually move—or stay—high or low in something approximating linear fashion, allowing central banks time to adjust.

With macroprudential policy, on the other hand, the aim is to avoid financial crises or the exacerbation of a recession originating outside the financial system. While not quite a binary environment for policymakers, the macroprudential world is one in which the absence of crisis for ten years may not indicate success, since one may quite suddenly come in year eleven if policy has not been sufficiently stringent. Conversely, there is no direct way of knowing whether macroprudential policies have been excessively stringent or misweighted over all those years, with consequential reduction in otherwise sustainable allocations of credit and thus an unnecessary constraint on growth. In other words, changing economic and financial conditions provide only limited information to determine whether the intertemporal tradeoff between credit allocation in the present and in the future has been properly struck.

Third, and related to the preceding point, is the problem of incentives for policymakers of all sorts—legislators, as well as central bankers and financial regulators. When a potential harm lies in the indeterminate future, and measures to offset that harm have immediate costs, officials directly or indirectly accountable to electorates will often feel pressure to discount the likelihood of the future harm and thus fix on less stringent offsetting measures. The obvious example here is climate change, where the impulse to downplay the harm to the future may bring catastrophic consequences. Fortunately, even the worst financial crises will not wreak the harm that may be caused by climate change. But in some sense the problem for macroprudential policy is even more acute. While there may be dramatic non-linear effects of climate change to come, there have already been many observable effects—feedback to the absence of meaningful policies in the past. The reality of future significant harm is now widely (though, needless to say, not universally) accepted. The financial system, on the other hand, tends to move from looking robust to looking highly stressed in the space of at most a year or two.

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5. Here I mean feedback in the more technical economic sense. There is plenty of political feedback from aggrieved financiers, their lobbyists, and their legislative supporters.

A fourth, and final, challenge is the regulatory perimeter—that is, whether policymakers have authority over a sufficient segment of total financial activity to make their macroprudential regulatory measures effective. This, of course, is an organizational and legal problem, not one inherent to macroprudential policy. In the United Kingdom, the Financial Policy Committee and the agencies represented on it together have plenary authority over most relevant actors and activities, though there are still some jurisdictional lacunae. In the United States, however, large swaths of financial activity lie outside the remit of any prudential regulatory authority—a situation not remedied by the structurally-flawed Financial Stability Oversight Council (FSOC) created after the crisis.<sup>6</sup> This gap means that various forms of shadow banking can escape regulation. It also raises the prospect that macroprudential measures applied to firms within the prudential regulatory perimeter will accelerate migration of lending out of those firms to shadow banking entities, with resulting harm to the franchise value of the regulated firms. While macroprudential considerations can nonetheless justify rigorous regulation of the largest banks—whose failures alone could trigger or worsen a crisis—it may be harder under such circumstances to justify the impact of macroprudential measures on community and regional banks.

### III

#### TIME-VARYING MEASURES

Conceptually, time-varying measures would seem a natural, if not necessary, feature of macroprudential policy. An explicitly countercyclical policy would tighten regulation in response to rapid, unsustainable increases in credit or asset prices and relax regulation as economic conditions deteriorate. Such an approach would require the greatest resiliency increases and dampen financial activity most at or near the top of financial cycles, while releasing bank funds and encouraging credit extension when financial markets have materially tightened.

Unfortunately, the impediments to fashioning a legal structure for macroprudential regulation are even greater for time-varying measures. On the upper reaches of the financial cycle, the four challenges just identified are, on net, more problematic. The feedback problem may be slightly diminished in time-varying contexts, since by directing policy measures at specific rising asset prices or credit levels, it becomes somewhat easier to evaluate whether the measures are having success (though no less difficult to judge whether the ultimate aim of macroprudential policy is being achieved without undue cost to current economic performance). But the regulatory perimeter problem is undiminished. And the analytic challenge is arguably even greater when one attempts to adjust policy in real time. For an efficacious response, there needs to be a fairly quick evaluation of whether fast rising levels of, for example, residential mortgage securitization,

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6. See Stavros Gadinis, *From Independence to Politics in Financial Regulation*, 101 CAL. L. REV. 327 (2013) (arguing that since the 2007–08 financial crisis the independent agency paradigm has been under attack).

agricultural land lending, or leveraged corporate loans are posing systemic risk within a particular economic context. Similarly, the incentive structure is further complicated for government officials operating in a specific moment, with specific economic and political pressures being brought to bear. Finally, there is a problem for time-varying policies that is largely irrelevant to through-the-cycle measures: during the stressed part of the financial cycle the market may frustrate, if not outright defeat, macroprudential policy changes.

The analytic complexities of time-varying macroprudential policy make the formulation of rules especially difficult. At least in the present state of knowledge, the isolation of reliable variables and metrics is a daunting task. But reserving discretion for regulators in the absence of at least presumptively determinative metrics introduces its own set of problems. At the risk of some oversimplification, during the non-stress parts of financial cycles the key problem in creating a workable legal structure for time-varying macroprudential policy is politics, and during the stressed parts of financial cycles the key problem is the market. The remainder of this Part develops this observation with a few examples. To avoid confusion, I should note that for present purposes “politics” includes institutional and internal agency considerations, as well as classic external political pressures.

#### A. Time-Varying Measures in Non-Stress Periods

The view that optimal capital requirements have a time-varying feature has an academic pedigree preceding the financial crisis,<sup>7</sup> which in turn built on the long-standing concern of some commentators that capital requirements were undesirably procyclical.<sup>8</sup> During upswings in the financial cycle, defaults are low, collateral values have risen, and bank capital levels are consequently less constrained by either regulatory or internally-generated capital requirements. In downturns, defaults and increased loss provisioning erode capital levels, a dynamic that can lead to credit squeezes even for creditworthy households and businesses.

In the Dodd-Frank Act, Congress gave the banking agencies explicit instructions to “seek to make [capital] requirements countercyclical, so that the amount of capital required to be maintained by a [bank or holding company] increases in times of economic expansion and decreases in times of economic

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7. See Anil K. Kashyap & Jeremy C. Stein, *Cyclical Implications of the Basel-II Capital Standards*, 28 ECON. PERSP. 18, 28 (2004), <https://www.chicagofed.org/publications/economic-perspectives/2004/1qtr2004-part2-kashyap-stein> [<https://perma.cc/HPJ8-68JW>] (concluding that “the Basel II approach of having a single time-invariant risk curve is, in principle, suboptimal”). The Basel Accords—Basel I, II, and III—are sets of international banking regulations which set minimum capital requirements of financial institutions with the goal of minimizing credit risk. *History of the Basel Committee*, BIS, <https://www.bis.org/bcbis/history.htm> [<https://perma.cc/9SR8-5QB9>].

8. See DANIEL K. TARULLO, *BANKING ON BASEL: THE FUTURE OF INTERNATIONAL FINANCIAL REGULATION* 77–79, 178–82 (2008) (raising general concerns of the procyclical nature of capital requirement and specific concerns regarding Basel I and Basel II).

contraction, consistent with the safety and soundness of the company.”<sup>9</sup> Even as Dodd-Frank passed Congress, the Basel Committee on Banking Supervision was working on a Countercyclical Capital Buffer (CCyB), which became one of the innovations in capital regulation produced by the Basel III package of changes to internationally-agreed capital standards. A CCyB framework was implemented in the United States as one of the post-crisis changes to capital rules.<sup>10</sup>

The CCyB can vary between 0 and 2.5%, based on semi-annual determinations made by the banking agencies. Generally speaking, it applies in the United States only to banks with greater than \$250 billion in assets and does not take effect for a year after an announced increase, so as to avoid abrupt constraints on bank lending. Reductions take place more or less immediately. When the CCyB is a positive number, it is added to the Capital Conservation Buffer, a fixed 2.5% of risk-weighted assets that itself sits on top of the minimum capital requirement of 4.5% of risk-weighted assets. When a bank’s common equity ratio falls into the buffer range, its distributions of capital to shareholders and employees (via certain kinds of bonuses) are progressively restricted.

The Basel Committee and U.S. officials explicitly characterize the CCyB as time-varying and macroprudential.<sup>11</sup> It is intended to increase the resiliency of the largest banking institutions, both to reduce their potential for failure and to increase the chances that they will be able to provide needed credit during a serious downturn. The Basel Committee has noted that a “positive side benefit” of the CCyB may be some lean-against-the-wind effect, if and as the buffer raises the cost of credit during the most expansionary parts of the financial cycle.<sup>12</sup> In the United States, the Federal Reserve made clear that the CCyB would be raised or lowered by reference to overall economic and financial conditions.<sup>13</sup>

There is considerable debate around the relative utility of the CCyB, including the disadvantages of its lagged and limited coverage, and whether a stress-testing regime that incorporated macroprudential features would be a better vehicle for countercyclical capital regulation. For present purposes, though, I put that debate aside in order to focus on CCyB as an illustration of the challenges presented by time-varying macroprudential regulation. Indeed, it offers an almost textbook case of the familiar rule vs. discretion debate, presenting as it does the likelihood of significant shortcomings whether a rule or a discretionary approach is chosen.

The central issue in administering the CCyB is how to decide when it should go up or down. Congress gave the banking agencies no guidance as to how they

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9. Dodd-Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111-203 § 616, 124 Stat. 1376, 1615–16 (amending 12 U.S.C. §§ 1467A, 1844, 3907 (2012)).

10. 12 C.F.R. § 217.11(b) (2014).

11. BASEL COMM. ON BANKING SUPERVISION, GUIDANCE FOR NATIONAL AUTHORITIES ON OPERATING THE COUNTERCYCLICAL CAPITAL BUFFER 1 (2010) [hereinafter BASEL COMMITTEE GUIDANCE]; The Federal Reserve Board’s Framework for Implementing the U.S. Basel III Countercyclical Capital Buffer, 12 C.F.R. § 217 App. A (2014) [hereinafter Fed. Policy Statement].

12. BASEL COMMITTEE GUIDANCE, *supra* note 11, at 1.

13. See Fed. Policy Statement, *supra* note 11.

should make capital requirements countercyclical. The Basel Committee, on the other hand, provided considerable guidance for its members' implementation of the CCyB.<sup>14</sup> Based on prior work by staff economists at the Bank for International Settlements, the Basel Committee concluded that a "credit-to-GDP gap was the best performing of the range of variables considered."<sup>15</sup> As its name suggests, this variable measures changes in the ratio of total private sector credit to GDP. The gap is derived from the observed deviation of the ratio from its trend. The Basel Committee guidance further suggested how the appropriate size of the CCyB should vary with the size of the credit-to-GDP gap.<sup>16</sup>

While the Basel Committee guidance indicated that each national authority should calculate the credit-to-GDP gap to "serve as a common starting reference point for taking buffer decisions," it also made clear that "[a]uthorities are expected to apply judgment" in setting the buffer.<sup>17</sup> The credit-to-GDP gap was thus not the basis for a rule—and really not even for a presumption. It was only a starting point for the exercise of national judgment. Yet even the effort to establish a common starting point has not been altogether successful. In the years following publication of the Basel III framework, a polite but vigorous debate ensued among official sector economists over the merits of the credit-to-GDP gap.<sup>18</sup> In addition to the issue of whether the underlying trend in the credit-to-GDP relationship was desirable and sustainable, truly technical issues such as the proper smoothing parameter were also debated.<sup>19</sup>

The Basel Committee's report on implementation of the CCyB indicates that some form of a credit-to-GDP ratio is just one among many "core" indicators

14. See generally BASEL COMMITTEE GUIDANCE, *supra* note 11.

15. *Id.* at 9.

16. *Id.* at 13–14.

17. *Id.* at 2.

18. See, e.g., Mathias Drehmann & Kostas Tsatsaronis, *The Credit-to-GDP Gap and Countercyclical Capital Buffers: Questions and Answers*, BIS Q. REV. 55, 55 (2014), [https://www.bis.org/publ/qtrpdf/r\\_qt1403g.htm](https://www.bis.org/publ/qtrpdf/r_qt1403g.htm) [<https://perma.cc/9H3B-TZNB>] (assessing criticisms of the credit-to-GDP gap, rebutting some, but emphasizing that the variable is supposed to inform rather than dictate use of CCyB); Rochelle M. Edge & Ralf R. Meisenzahl, *The Unreliability of Credit-to-GDP Ratio Gaps in Real Time: Implications for Countercyclical Capital Buffers*, INT'L J. CENT. BANKING 261 (2011); Julia Giese et al., *The Credit-to-GDP Gap and Complementary Indicators for Macroprudential Policy: Evidence from the UK*, 19 INT'L J. FIN. ECON. 25 (2014), <https://onlinelibrary.wiley.com/doi/epdf/10.1002/ijfe.1489> [<https://perma.cc/7RAK-FPXZ>] (stating that despite the accuracy of the credit-to-GDP gap in providing advance signal of past U.K. episodes of financial distress, it may not work well in future); Timothy Grieder, Dylan Hogg & Thibaut Duprey, *Recent Evolution of Canada's Credit-to-GDP Gap: Measurement and Interpretation*, Bank of Can. Staff Analytical Note 2017-25 (Dec. 2017), <https://www.bankofcanada.ca/wp-content/uploads/2017/12/san2017-25.pdf> [<https://perma.cc/EA/8Q-6VAF>] (arguing that the credit-to-GDP gap both misses and mistakenly identifies financial system vulnerabilities); Torsten Wezel, *Conceptual Issues in Calibrating the Basel III Countercyclical Capital Buffer* (Int'l Monetary Fund, Working Paper No. 19/86, 2019), <https://www.imf.org/en/Publications/WP/Issues/2019/05/01/Conceptual-Issues-in-Calibrating-the-Basel-III-Countercyclical-Capital-Buffer-46742> [<https://perma.cc/W377-394Z>] (explaining the needs for adjustment to the Basel credit-to-GDP gap to make it a robust explanatory variable).

19. See BASEL COMMITTEE GUIDANCE, *supra* note 11, at 2.



specified by national authorities.<sup>20</sup> In the United States, the banking agencies have not specified any “core” indicators. The Federal Reserve’s CCyB regulation says only that

[t]he Board will base its decision to adjust the countercyclical capital buffer amount under this section on a range of macroeconomic, financial, and supervisory information indicating an increase in systemic risk including, but not limited to, the ratio of credit to gross domestic product, a variety of asset prices, other factors indicative of relative credit and liquidity expansion or contraction, funding spreads, credit condition surveys, indices based on credit default swap spreads, options implied volatility, and measures of systemic risk.<sup>21</sup>

Administrators are often inclined to maximize their discretion, so the fact that they have declined to adopt a rule or rule-like presumption does not itself prove that a rule would be unworkable. More telling, perhaps, has been the practice of the handful of jurisdictions that aggressively used the CCyB requirement.<sup>22</sup> In raising its CCyB four times, eventually to the maximum 2.5%, Hong Kong did identify a positive credit gap as the key consideration.<sup>23</sup> But Norway and Sweden have over the last several years increased their CCyB requirement to the

20. BASEL COMM. ON BANKING SUPERVISION, IMPLEMENTATION: RANGE OF PRACTICES IN IMPLEMENTING THE COUNTERCYCLICAL CAPITAL BUFFER POLICY 16–17 (June 2017) [hereinafter CCyB IMPLEMENTATION]. Germany, for example, has identified the greatest number of “core” indicators, with thirty. *Id.*

21. 12 C.F.R. § 217.11(b)(2)(iv) (2019). In its policy statement on the framework it will follow in making this decision, the Federal Reserve underscored the absence of anything resembling a standard in adding that “no single indicator can adequately capture all the vulnerabilities in the U.S. economy and financial system.” Fed. Policy Statement, *supra* note 11, at 27. My experience at the Federal Reserve was that staff presentations to the Board during the semi-annual CCyB decision generally placed most emphasis on half a dozen variables, but included discussion of notable sectoral and other developments as well. In a recent speech on the CCyB, Vice Chair for Supervision Randal Quarles linked the Federal Reserve’s CCyB decisions to the factors highlighted in its periodic Financial Stability Reports. In listing these factors, he added that as “part of this process, the Board considers a number of quantitative indicators – one of which is the credit-to-GDP . . . gap proposed in the Basel Committee guidance.” Randal K. Quarles, Vice Chair for Supervision, Fed. Reserve, Speech on Frameworks for the Countercyclical Capital Buffer at the Spring 2019 Meeting of the Manhattan Institute’s Shadow Open Market Committee (Mar. 29, 2019).

22. See CCyB IMPLEMENTATION, *supra* note 20, at 18 (summarizing the actions of four jurisdictions that used the CCyB in its early years). Subsequently, implementation of the CCyB portion of the European Union’s Capital Requirements Directive (CRD IV) has resulted in a number of additional impositions of positive CCyB buffer requirements. See EUROPEAN SYSTEMIC RISK BOARD, COUNTERCYCLICAL CAPITAL BUFFER [hereinafter ESRB CCyB Report], [https://www.esrb.europa.eu/national\\_policy/ccb/html/index.en.html](https://www.esrb.europa.eu/national_policy/ccb/html/index.en.html) [<https://perma.cc/J9TC-JRU7>] (offering a map to show CCyB rates throughout the European Union) (last updated Oct. 16, 2019).

23. H.K. Monetary Auth., Announcement by the Monetary Authority of Applicable Jurisdictional Countercyclical Capital Buffer Ratio for Hong Kong (Jan. 10, 2018), [https://www.hkma.gov.hk/media/eng/doc/key-functions/banking-stability/ccyb/CCyB\\_Announcement/\\_180110.pdf](https://www.hkma.gov.hk/media/eng/doc/key-functions/banking-stability/ccyb/CCyB_Announcement/_180110.pdf) [<https://perma.cc/RU97-MFCE>]. Following the political disruption in Hong Kong in 2019, the Hong Kong Monetary Authority (HKMA) lowered the CCyB to 2.0%. The HKMA noted that application of the credit gap would call for a CCyB of 2.25%, but noted that the “setting of the CCyB for Hong Kong is however not a mechanical exercise,” and explained the additional incremental of reduction by reference to its assessment that economic conditions in Hong Kong had continued to deteriorate. H.K. Monetary Auth., Announcement by the Monetary Authority of Applicable Jurisdictional Countercyclical Capital Buffer Ratio for Hong Kong (Oct. 14, 2019) [https://www.hkma.gov.hk/media/eng/doc/key-functions/banking-stability/ccyb/CCyB\\_announcement\\_191014.pdf](https://www.hkma.gov.hk/media/eng/doc/key-functions/banking-stability/ccyb/CCyB_announcement_191014.pdf) [<https://perma.cc/GKE6-5LKP>].

maximum 2.5% during a period in which their credit-to-GDP gaps were, respectively, still quite negative<sup>24</sup> and only recently passing into positive territory.<sup>25</sup> The latest Norwegian increase was based on rising levels of household debt and property price increases.<sup>26</sup> The Norges Bank did not even mention the gap. Conversely, the Swedish financial regulator's announcement of its latest increase actually indicated that increases in debt levels were moderating and property prices were largely stable.<sup>27</sup> However, the financial regulator still raised the CCyB because these recent trends were not pronounced enough to remove financial stability risks.<sup>28</sup> The actions of regulators in both countries imply that the credit-to-GDP gap may miss developments that might threaten financial stability or, perhaps, not reflect risks on a sufficiently timely basis.

At least in the present state of knowledge, then, an effective rule or rule-lite approach to use of the CCyB does not seem available. But if time-varying measures are back in the world of broad discretion, two basic issues immediately present themselves. First is the usual set of administrative law considerations such as the potentially drawn-out procedures that might be required before action could be taken. More salient for the subject of this Article is the incentive structure for decision-makers considering increases in the CCyB.

Numerous commentators have conjectured that officials will too often decline or hesitate to exercise their time-varying authority to raise the CCyB despite the presence of financial conditions warranting such a move.<sup>29</sup> The absence of any firm basis for judging whether systemic risk has been appropriately corralled may complicate time-varying decisions more than macroprudential policy in general. The reasons not to raise the buffer requirement will have more sway in the circumstances of a time-varying decision at a specific moment. Even as the risks of financial instability are increasing, risks to underlying economic growth may be appearing on the horizon. A CCyB increase, which does not become effective

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24. NORGES BANK, MONETARY POLICY REPORT WITH FINANCIAL STABILITY ASSESSMENT 47 (2019), [https://static.norges-bank.no/contentassets/cda000898c914e7890fa1b545d81ace4/mpr\\_219.pdf?v=06/20/2019093243&ft=.pdf](https://static.norges-bank.no/contentassets/cda000898c914e7890fa1b545d81ace4/mpr_219.pdf?v=06/20/2019093243&ft=.pdf) [https://perma.cc/7AZY-4GHU].

25. Decision by Finansinspektionen, FI Ref. 19-14609 (July 5, 2019), <https://www.fi.se/content/assets/a20f6352ede24bba9a9965ac5d37553e/beslut-kontracyklisk-buffert-2019kv3-eng.pdf> [https://perma.cc/MSP2-ZV88].

26. Press Release, Norges Bank, Advice on the Countercyclical Capital Buffer 2018 Q4 (Dec. 13, 2018), <https://www.norges-bank.no/en/news-events/news-publications/Press-releases/2018/2018-12-13-press-release-mcb/> [https://perma.cc/JVP6-FHJU] (reporting Norges Bank recommendation and acceptance by Finance Ministry).

27. Decision by Finansinspektionen, *supra* note 25.

28. *Id.*

29. See, e.g., Kristen Forbes, *Macroprudential Policy: What We've Learned, Don't Know, and Need to Do*, 109 AM. ECON. REV. PAPERS & PROC. 470, 472–73 (2019) (stating that “[a]ny macroprudential authority influenced by the political cycle would be tempted to adopt less stringent regulations”); Michal Kowalik, *Countercyclical Capital Regulation: Should Bank Regulators Use Rules or Discretion?*, FED. RESERVE BANK OF KAN. CITY ECON. REV. 59, 68–69 (2011) (providing several reasons why authorities may be reluctant to raise capital requirements); Itai Agur & Sunil Sharma, *Rules, Discretion, and Macro-Prudential Policy* 11 (Int’l Monetary Fund, Working Paper No. 13/65, 2013) (explaining that “the nature of macro-prudential policy makes it more susceptible to political influence than monetary policy”).

for a year after announcement, may begin to bite just as economic conditions are becoming shaky. In the world of a low neutral rate of interest in which we are likely to be living for a good while, central banks have more limited means to counteract recessions. As a consequence, their own risk management strategies will tend to err on the side of measures that may stave off recessions, even at the expense of greater risk to financial stability at some indeterminate future time. If a central bank doesn't want to tighten financial conditions with monetary policy, why do so with time-varying macroprudential measures? And, of course, there are the more direct political pressures that have often been exerted, frequently on a bipartisan basis, when government authorities discourage additional lending for prudential reasons.<sup>30</sup>

The foregoing points are, like those of other commentators, conjectural. We simply do not have enough experience from which to draw empirically grounded conclusions. But that fact is itself part of the challenge with macroprudential policy; there are never likely to be enough observations to allow a more or less rigorous separation of the factors that influence decisions and produce financial instability. Good faith conclusions that risks are not elevated, a desire not to staunch lending for shorter-term macroeconomic reasons, a misunderstanding of the purpose of the CCyB, policy commitment to deregulation of large banks, and capture are some of the many reasons for inaction. But there do seem to be grounds for believing that, no matter what their ideology, the structural incentives faced by Federal Reserve officials create some bias toward underuse of the CCyB. The interesting fact that other jurisdictions *have* applied the CCyB, though generally in only mild form, is one to which I shall return in the last Part of the Article.

## B. Time-Varying Measures in Stress Periods

As stress builds, the challenge for time-varying macroprudential measures arises less from analytic and political problems and more from the market. Incentives of government officials become progressively, and eventually overwhelmingly, focused on containing the stress and then combatting macroeconomic fallout. There may be political resistance to various forms of government assistance for financial actors associated with an impending or actual crisis. But the most likely sources of resistance to relaxing macroprudential requirements are regulators focused on the soundness of individual banks, such

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30. See, e.g., H. Gary Pannell & Robert L. Carothers, Jr., *Regulation Guidance on Concentrations in Commercial Real Estate Lending*, 11 N.C. BANKING INST. 33 (2007) (recounting the history of the guidance, including the delays and dilution occasioned by the opposition); FED. DEPOSIT INS. CORP., CRISIS AND RESPONSE: AN FDIC HISTORY, 2008–2013 119 (2017) <https://www.fdic.gov/bank/historical/crisis/crisis-complete.pdf> [<https://perma.cc/G9YP-DNRZ>] (noting that overextension in commercial real estate lending was at the heart of the failure of many banks during and after the 2008 financial crisis); Steven Sloan, *Legislators Press Agencies On Basel, CRE Guidelines*, AM. BANKER, (Sept. 1, 2006), <https://www.americanbanker.com/news/legislators-press-agencies-on-basel-cre-guidelines> [<https://perma.cc/5Q3N-8UM4>] (detailing the resistance from both banks and members of Congress to the proposed guidance on excessive concentrations in commercial real estate).

as government deposit insurance agencies and the market. The understandable institutional position of deposit insurers can be handled through intergovernmental discussion and action (though, as demonstrated in the United States in the last financial crisis, this process may not go smoothly). The market is a different story.

The existence of non-localized stress in a financial system reflects both new knowledge in the form of wider awareness of previously unrecognized asset and firm vulnerabilities, and high anxiety about continuing ignorance of the depth and breadth of those vulnerabilities. In such circumstances, most private financial actors flee institutions and assets that *might* be affected quickly, in contrast to non-stress periods in which more considered analysis is likely to precede a change in position. The implicit rule of thumb is to run to safe assets like Treasuries first and figure things out later. Most investors and other counterparties want to deal only with firms about whose soundness there is little, if any, real doubt.

Paradoxically, the heightened sensitivity of markets to the soundness of financial firms in periods of stress may undercut official discretionary actions *either to strengthen or to relax prudential requirements*, though for distinct reasons. As to strengthening requirements, one of the interesting conclusions drawn from study of the global financial crisis—and, for that matter, of the emerging market financial crisis of the 1990s—is that the crisis proceeded in somewhat distinct stages that were separated by periods of relative calm. The market excitement caused by events in August 2007 gave way to a period of uneasy stability that was rocked in March 2008 by the failure of Bear Stearns, which was in turn followed by less volatility until September, when Lehman Brothers' failure ushered in the most acute phase of the crisis. In retrospect, it appears there may have been an opportunity in the fall of 2007 and, possibly, mid-2008 for large financial firms to increase their capital levels while markets were still open through public equity raises. Although the subsequent unwinding of mortgage-backed security positions and home foreclosures would not have been prevented, major financial institutions might have been less susceptible to loss of both capital and market confidence once the next stage hit.

This history has suggested to some that the Federal Reserve (and, presumably, regulators in other countries) should use such periods of calm to force large banks, especially those with more obvious vulnerabilities, to go to market to increase their common equity.<sup>31</sup> Putting aside the issue of whether existing statutory authority gives the Federal Reserve the power to do so, the question is whether such a step could provoke a run on some banks or the system as a whole. The concern is that the discretionary act of requiring a capital raise would itself, in a very delicate market environment, be read as a signal of the Federal Reserve's view that there were real risks of insolvency for certain banks or even a general market meltdown. This perceived signal might set off an

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31. See, e.g., Robin Greenwood, Samuel G. Hanson, Jeremy C. Stein & Adi Sunderam, *Strengthening and Streamlining Bank Capital Regulation*, BROOKINGS PAPERS ON ECON. ACTIVITY 479, 529–30 (2017).

immediate run, rather than stop one later. How the scenario would play out we of course do not know. But, with officials aware of the possibility of a run and focused on staving off a major financial upheaval, there will surely be inhibitions on taking such action.<sup>32</sup>

The dynamic is different with respect to relaxing requirements once the economy and the financial system seem to be bottoming. Knowing that investors and counterparties are intensely scrutinizing them for any sign of weakness, the executives of banks and other financial institutions will do all they can to project the soundness of their firms. One obvious way is to keep capital and liquidity ratios up by reducing lending, sometimes dramatically. In the fog of a financial crisis, reported capital ratios are assumed—usually correctly—to be lagging and thus misleadingly high. So bank executives are incented to keep their reported ratios strong enough that even some discount will leave them looking sound. Sitting on capital buffers and piles of very liquid assets thus seems a good strategy for individual banks, though obviously not for the economy as a whole.

This tendency might be counteracted by forcing banks to build large enough buffers in non-stress periods so that, even with big losses and residual uncertainty about further losses to come, they will still appear viable. Well before the 2008 financial crisis, astute commentators advocating for countercyclical capital regulation made this argument.<sup>33</sup> That is one reason for using some combination of stress tests, countercyclical capital requirements, and possibly other measures to require at least the largest institutions to hold capital that will enhance their chances of surviving tail events without being compromised in the eyes of the market. If non-stress period capital requirements are made less rigorous—as has arguably been the case over the last few years—the losses that accompany a crisis may, at least for a time, leave some banks technically adequately capitalized but effectively unable to intermediate new lending. In those circumstances, dialing back capital requirements will be utterly ineffective, since banks whose position is open to doubt will still husband every penny of capital and liquidity they can. During the fall of 2008, the guiding principle at numerous firms was “no money leaves the bank.” In effect, the microprudential orientation of private markets during stress periods will override any official relaxation of macroprudential measures. Thus, the disincentives to applying adequate macroprudential capital buffers in non-stress periods may defeat the later effort to relax the (inadequately) higher requirements that had prevailed in peacetime.

The potential for markets to undermine time-varying macroprudential regulation is also illustrated by the liquidity requirements put in place following

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32. It was also notable that the U.S. Treasury insisted on injecting capital into *all* systemically important banks in late 2008, even those that might not have needed it to survive. This step was in part intended to avoid singling out any banks as especially vulnerable. Officials could also resort to quiet persuasion, though that course runs the dual risks of becoming public and nonetheless being ineffective. Once it is clear that the financial system is in crisis, and that specific banks are under siege by markets, there will obviously be less weight attached to official efforts to increase bank capital levels.

33. See generally Kashyap & Stein, *supra* note 7 (advocating for forcing banks to build large buffers in non-stress periods).

the financial crisis. Given that funding runs and liquidity squeezes were defining characteristics of the financial system in 2008, it was necessary for regulators to break new ground in devising quantitative liquidity rules to complement capital regulations. To date, only one of the post-crisis rules has been implemented—the Liquidity Coverage Ratio (LCR). The LCR is not principally a macroprudential time-varying rule. But, as will be explained shortly, regulators likely want it to fulfill a macroprudential purpose through a time-varying feature. The problem, again, is that markets may not go along with a regulatory relaxation of the requirement during stress periods.

The LCR obliges large banks to maintain enough High Quality Liquid Assets (HQLA) so that they could essentially self-fund for thirty days during a stress period. The regulation assigns liquidity weights to a bank's assets, reflecting regulatory judgment of the fraction of the nominal value of the asset that could be obtained through sales in a stress period. The bank's HQLA must exceed the difference between the bank's expected outflows and inflows of cash during that same thirty-day period. So, for example, Treasuries are assumed to be completely liquid, and thus available to be sold to obtain market funding, while long-term loans are assumed to be effectively illiquid within the thirty-day timeframe and do not contribute at all to the HQLA stock. Outflow and inflow rates are assigned to the bank's assets and liabilities, as applicable.

There are more details, of course—many more, actually. But the core idea is that requiring large banks to have less fragile funding structures will make them less vulnerable to the kinds of shocks that brought down Bear Stearns and Lehman Brothers in 2008. Moreover, even if a bank does head towards insolvency, its demise will not so quickly occur through a massive run by short-term funding providers. As a result, authorities would have more time to decide what to do about the bank (placing it into resolution, arranging a sale, and so forth) than the weekend they had as Bear Stearns and Lehman Brothers failed.

There is much that can be debated about the merits in normal times of post-crisis liquidity regulation, but this is not the place for such a discussion. The issue with the LCR relevant here is what happens in conditions of significant financial stress. The LCR is not time-varying in the way that countercyclical capital requirements are. That is, the requirement that HQLA be 100% or more of net expected funding needs for a thirty-day period does not increase in periods of ample liquidity and does not, at least in any determinate way, decline under stress. But the terms of the LCR reflect some regulatory uncertainty as to whether banks should remain above the minimum ratio in the latter circumstance.

As negotiated internationally in the Basel Committee on Banking Supervision, the LCR specifies that “[d]uring a period of financial stress, however, banks may use their stock of HQLA, thereby falling below 100%.”<sup>34</sup> In

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34. BASEL COMM. ON BANKING SUPERVISION, BASEL III: THE LIQUIDITY COVERAGE RATIO AND LIQUIDITY RISK MONITORING TOOLS 4 (2013), <https://www.bis.org/publ/bcbst238.pdf> [<https://perma.cc/C7DF-S4UG>].

such an event, “[s]upervisors will subsequently assess this situation and will adjust their response flexibly according to the circumstances.”<sup>35</sup> This response is to be formulated with reference to a lengthy set of factors that may vary depending on whether the bank faces idiosyncratic or systemic stress.<sup>36</sup>

The version of the LCR implemented in the United States does not track the Basel Committee language that gives banks leave to use HQLA during “a period of financial stress.” The U.S. regulation simply states that a bank subject to the LCR must immediately report to its regulator any occurrence of its LCR falling below 100%.<sup>37</sup> If it stays below 100% for three consecutive business days, the firm is then obliged to present “a plan for achieving compliance with the minimum liquidity requirement.”<sup>38</sup> While this U.S. regulation may seem a significant departure from the international standard, it actually reflects little disagreement with the intuition behind the Basel Committee provision. U.S. regulators were concerned that the international LCR might be read as making the existence of a “period of financial stress” a matter for the judgment of the bank itself. But they shared the view that some relaxation may be desirable. The U.S. requirement of reporting a shortfall has no immediate consequences other than, possibly, producing a plan to return to compliance. In the Federal Register notice accompanying the final rule, the U.S. banking agencies reaffirmed an earlier stated “principle that a covered company’s HQLA amount is expected to be available for use to address liquidity needs in a time of stress.”<sup>39</sup> The agencies characterized this approach of reporting shortfalls without immediate consequences as giving them “the appropriate amount of supervisory flexibility.”<sup>40</sup>

The reason for the de facto time-varying character of the LCR is not hard to fathom. The purpose of liquidity regulation is to counteract the profit-maximizing incentive to “underhoard” liquidity in normal times, when it is readily available, by directing more funding into higher-yielding (and thus, generally, less liquid) investments.<sup>41</sup> The LCR is premised on a potentially quite bad outcome should stress hit, though the projected impact on a firm’s funding is entirely plausible in light of the Lehman Brothers experience and its aftermath. But certainly in the earlier stages of a stress period most firms will not be subject to runs. Funding will undoubtedly tighten for many, though banks regarded as especially strong might experience an *inflow* of funding as investors run from

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35. *Id.*

36. *Id.* at 4–5.

37. 12 C.F.R. § 249.40(a) (2014).

38. *Id.* § 249.40(b)(2).

39. Liquidity Coverage Ratio, Liquidity Risk Management Standards, 79 Fed. Reg. 61440, 61517 (Oct. 10, 2014).

40. *Id.*

41. See Jean Tirole, *Illiquidity and All Its Friends*, 49 J. ECON. LITERATURE 287, 296 (2011) (“Underhoarding may result from a form of asset substitution, sacrificing insurance for size. The institution may dispose of its liquid assets in order to expand the scale of its illiquid investments. It thereby obtains less insurance, but it still receives some.”).

riskier assets. But if all banks try to project strength or guard against the very worst that might later happen by overhoarding their liquidity, then systemic stress may increase. More and more firms—non-financial as well as financial—will face cash shortages as their usual sources of liquidity dry up. This possibility is a good example of how a purely microprudential regulatory perspective may be at odds with a macroprudential perspective. The courses of action that look best for each bank considered individually may be disastrous for the system as a whole and thus, eventually, for those very banks.

Once stress is present, regulators are in an awkward position. While they may well want banks to fall below a 100% LCR in order to continue supplying liquidity to creditworthy customers, the signaling effects of any move in this direction could be counterproductive. Ironically, this may be especially true during the early stages of financial market tightening, the very time at which measures to keep liquidity flowing might be most efficacious in slowing the contraction process. A public statement by the Federal Reserve officially relaxing LCR requirements because of growing stress conditions would almost surely cause some degree of market turbulence. This possibility helps explain why the Basel Committee LCR appears to leave the determination of stress to the banks and why the U.S. version is so vague on the issue of consequences for falling below 100%.

Quite apart from regulatory requirements and guidance, there will be enormous pressure on banks during stress periods to hoard their liquidity, from both internal and external sources. This phenomenon was readily apparent during 2008 and the early part of 2009. Internally, tail scenarios of frozen markets—which in normal times seem far-fetched—will be front and center in discussions among senior management. Externally, investors and market analysts—not to mention regulators—will be anxiously seeking information on each bank's capital and liquidity positions.

The question is whether a reasonably rigorous liquidity standard established and maintained in non-stress times could make the liquidity situation worse when stress hits. There is some reason to believe the answer may be yes. As already noted, not all banks will experience funding challenges, and even those that do will experience them with considerably varying intensity. While the LCR was obviously not in place in the pre-crisis period, and it would be difficult retrospectively to calculate banks' positions with any precision, it seems very likely that banks that were regarded as some of the strongest were running well below the 100% level. Precisely because they were not thought especially vulnerable by market actors, they continued to see inflows of funding. While few banks were taking new risks in their lending decisions, especially from clients with which they did not have well-established relationships, those that were in stronger positions continued to provide liquidity in the narrowed range of less risky lending. They also provided liquidity to existing clients under the standing lines of credit that were activated by many non-financial firms. The danger is that even stronger banks would hesitate to do the same with the LCR in place.



It is important not to overstate the risk here. It may be that the LCR will have changed liquidity practices enough that the squeeze on both banks and customers will be less acute in a future stress period. Or it may be that banks will be reassured by informal supervisory communications to the effect that running somewhere below 100% for a period of time is consistent with sound practice under the circumstances. But there is also a chance that the existence of a clear *ex ante* regulatory requirement will be regarded by investors and analysts as a convenient shorthand for a firm's strength, and that banks—no matter how strong, at least relatively speaking—will do all they can to maintain themselves above that level. Indeed, some bank executives have suggested to me in private conversations (in my post-Federal Reserve academic capacity) that they would be concerned about anything but a trivial decline in their LCR, even if it remained above 100% (for example, from 115% to 105%). If this is the case, then quiet signals from regulators that LCRs below 100% are acceptable may have little practical effect.

The requirement for regular public reporting of LCR levels, as part of the post-crisis effort to provide more information on banks to markets, may exacerbate whatever risk does exist. Banking interests filed comment letters to this effect during the rule-making process on the LCR.<sup>42</sup> While it is usually advisable to discount somewhat industry arguments lodged against a proposed regulation, this one rang true at the time it was made and continues to resonate with anyone whose job it was to watch closely what banks were doing, and what they were worried about, in the 2008 to 2009 period. Most bankers have made clear that they are not quarreling with the LCR, at least in its main features, but with public disclosure requirements. However, to the degree that investors and analysts are focused on the LCR as an indicator of bank resiliency, it is not clear that eliminating public reporting would make much of a difference. While public reporting is required only once a quarter, everyone knows that daily reporting to regulators is required for the largest banks. So the chief financial officers of banks can expect demands for more frequent public disclosure during stress periods. The banking agencies might forbid disclosure. Yet that might make things even worse, as outside actors made their own—likely inaccurate and overly pessimistic—estimates of banks' LCRs based on inference from publicly available information.

Thus the LCR may present an interesting variant on the commonplace observation that markets may displace regulators as the source of binding constraint on banks during stress periods. Here, in a kind of mutation of Goodhart's Law,<sup>43</sup> the creation of a legal requirement using a particular metric changes its utility not because banks look for ways around it, but because markets

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42. 79 Fed. Reg. at 61517.

43. Goodhart's Law holds that when a metric becomes a target it stops being as reliable a metric. In more usual cases Goodhart's Law operates as financial actors anticipate the impact of a financial regulatory metric and find ways to avoid crossing some regulatory threshold while still effectively carrying on the practice that gave rise to the regulation.

and investors will effectively “enforce” it during stress, no matter what regulators mindful of macroprudential risks may say.

#### IV

##### MOVING FORWARD

To sum up: Incorporating a macroprudential component into financial regulation is central to achieving financial stability goals. Time-varying macroprudential regulation is, almost by definition, most congruent with countercyclical and financial stability policy aims. Unfortunately, the analytic, institutional, and market challenges in effectively implementing time-varying macroprudential measures are greater than the already significant challenges associated with through-the-cycle measures.

Confronted with this predicament, we might simply eschew time-varying measures. In one sense, that is not an unreasonable course of action. It would have the added virtue of allowing a full discussion, involving the public as well as government officials, of the merits of proposed through-the-cycle measures. But it would place a substantial burden on those time-invariant policies (or, more controversially, on the venerable time-varying instrument of monetary policy). Even in a prolonged period of low real and nominal interest rates, in which financial stability risks associated with plentiful credit could remain fairly elevated, officials may be reluctant to set time invariant restrictions high enough to create buffers that would withstand all losses associated with a tail event. The cost to normal time economic activity would be regarded as too high.

So there may be good reason to continue looking for workable time-varying policies. Here both economics and law professors should find themselves on at least somewhat familiar ground, insofar as bridging rules vs. discretion impasses is a recurring policy problem. In the absence of satisfactory metrics for more or less hard rules, the issue will be how to offset the disadvantages associated with discretion. As the preceding discussion has shown, the disadvantages are quite distinct in different contexts. In non-stress times, the incentives of regulators may disincline them to increase capital requirements or to use other instruments such as increasing minimum margin requirements for securities financing transactions. During periods of rising stress, on the other hand, an instruction to increase capital or liquidity or margins directed to one or more banks, or to markets generally, might be read as a signal of official alarm. The result may be a run. Conversely, once the system is obviously under considerable stress or already in the throes of a recession, a discretionary move to relax prudential requirements may be de facto countermanded by banks and markets.

As the example of the LCR suggests, the last of these problems could arise even if a rule-based measure were in place. It may be that changes in disclosure requirements or practices could ameliorate this problem but, as mentioned earlier, maybe not. This issue of market-induced procyclicality during the down periods of the financial cycle remains a significant challenge, with no great solutions in sight. This is especially true in the area of liquidity, where changes in

a bank's position can happen very quickly and thus the room for error is considerably narrower.

With respect to the disadvantages of discretion for appropriate tightening of prudential requirements, things may be a little more promising. The goal in these instances is to enlist some external influence to offset those disadvantages. One possibility is suggested by European Union (EU) practice on countercyclical capital buffers. Although the more financially important Member States have required only small CCyBs,<sup>44</sup> by 2020 more than half of all EU countries will have put *some* CCyB buffer into effect.<sup>45</sup> It may be that the transnational character of the EU's CCyB, coupled with peer review within the European Systemic Risk Board (ESRB), has at least some influence on Member States' authorities with responsibility for activating the CCyB. The other Member States and the ESRB itself are presumably more focused on EU-wide financial stability and less susceptible to local pressures.

Whatever the validity of this supposition in the European context, a comparable external governance device is not an option in the United States. It's hard to see what other government actors would have both the stature and the incentive to prod the Federal Reserve into activating the buffer. Indeed, as part of an Administration that will always be interested in retaining the Presidency for its party, the Secretary of the Treasury—chair of the FSOC—will if anything have an even greater inclination to favor near-term additional growth relative to protecting the financial system against problems that may be years in the future.<sup>46</sup>

A more promising, though necessarily incomplete, option would be to use a rule approach to activate a modest macroprudential measure, while leaving discretion within some legislatively established bounds to strengthen the rule-determined measure. The idea is to force at least *some* countercyclical action, even against a backdrop of admitted uncertainty as to precisely how much additional systemic risk is being created. In the CCyB context, for example, one would select some metric—or, conceivably, combination of metrics—that is thought to be best correlated with systemic risk and establish a threshold level of that metric, above which a modest CCyB would automatically apply—perhaps 0.25%. Higher thresholds might also be established, the crossing of which would

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44. The United Kingdom has imposed a one percent CCyB, but in doing so it has departed somewhat from the original concept of the CCyB. The Bank of England has decided that the CCyB should stand at one percent in normal times, so that it could be lowered if conditions deteriorate. While this is a fully coherent concept, it in effect is a substitute for higher fixed capital requirements in normal times. As noted in the text, if capital levels are not high enough going into a crisis or serious recession, the supposed ability to reduce capital requirements may be ineffectual.

45. CCyB rates for all EU Member States are reported monthly on the website of the European Systemic Risk Board. ESRB CCyB Report, *supra* note 22.

46. As many commentators have noted, the structure of the Financial Policy Committee (FPC) within the Bank of England presents an interesting institutional approach to macroprudential policy. The FPC is chaired by the Governor of the Bank of England, but has membership from both government agencies and outside, "independent" members. The Treasury has non-voting participation. While the FPC has taken some notable actions, it does not yet have enough of a track record to determine if it can avoid the structural incentives suggested earlier.

bring incremental increases in the CCyB. Along the way, officials would be free to use the discretion they have now to increase the CCyB consistent with statutory authority and implementing regulations.<sup>47</sup>

Use of a rule of modest ambition might also help in buttressing resiliency while financial stress is rising, but before it reaches an acute stage. One idea that has been discussed informally among some policy observers is to establish a rule that would automatically suspend capital distributions by large banks if their aggregate capital ratio falls below a threshold specified *ex ante*. All large banks would be required to suspend capital distributions, regardless of each firm's own capital ratios. By applying this prohibition to all large firms in conformity with a rule established well in advance, a triggering of the rule by a drop in aggregate capital levels would obviously not signal any new information on the views of macroprudential authorities such as central banks. The thought of those who have suggested such a rule is that it would avoid—or at least substantially reduce—the risk of a run that might be occasioned by a discretionary regulatory order affecting capital, whether directed at all or fewer than all firms.

It goes without saying that these examples would not solve the policy dilemma I have described. With respect to the CCyB, there would doubtless be some false positives with any metric—whether the Basel Committee's favored credit-to-GDP gap, or a specified absolute increase in credit over some number of quarters, or any other possibility. And the disincentives to discretionary use of the CCyB would not have been removed. The notional rule suspending capital distributions could create perverse incentives for banks. As the aggregate capital ratio approached the threshold whose breach would trigger suspension, they might *increase* capital distributions to beat the clock, as it were. And the rule would not respond to the problem of banks that needed to build capital, rather than just stop distributing it to shareholders.

Obviously, modest rules of this sort would need to be well-fashioned to anticipate and minimize undesirable effects. But if the alternative is a situation that is structurally biased toward inaction, the old maxim about not letting the perfect be the enemy of the good—or at least the pretty good—would seem to apply. Going forward, policy commentators and policymakers will need to evaluate the best options that are feasible under current analytic and institutional limitations. Hopefully they will also develop some new options that might better manage the intertemporal tradeoffs that must be made in an environment of substantial uncertainty.

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47. Sometimes policy observers raise the possibility of using the kind of framework of constrained discretion that effectively governs monetary policy in the United States and many other countries. This doesn't seem like a promising route, insofar as the problem in monetary policy that constrained discretion purports to address is a time consistency problem—the central bank will lower rates for a near term economic boost while promising to take away the punchbowl when inflation is headed significantly above target, but markets doubt the central bank will do so at that later date. Here the problem is that the officials in whom discretion has been lodged decline to act in the first place. Moreover, the observable target and institutional credibility that are fundamental to that strategy are, as a practical matter, unavailable for macroprudential policy.